

10/669012

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

**CORRECTED VERSION**

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
9 November 2000 (09.11.2000)

PCT

(10) International Publication Number  
**WO 00/66969 A2**

(51) International Patent Classification<sup>7</sup>:

**G01B**

(71) Applicant (for all designated States except US): **ZYGO CORPORATION** [US/US]; 21 Laurel Brook Road, Middlefield, CT 06455-0448 (US).

(21) International Application Number: PCT/US00/12097

(72) Inventor; and

(22) International Filing Date: 5 May 2000 (05.05.2000)

(75) Inventor/Applicant (for US only): **HILL, Henry, A.** [US/US]; 340 South Avenida De Palmas, Tucson, AZ 85716 (US).

(25) Filing Language: English

(74) Agent: **PRAHL, Eric, L.**; Fish & Richardson, P.C., 225 Franklin Street, Boston, MA 02110-2804 (US).

(26) Publication Language: English

(81) Designated States (national): CN, JP, KR, US.

(30) Priority Data:

09/305,828 5 May 1999 (05.05.1999) US  
09/384,851 27 August 1999 (27.08.1999) US

(84) Designated States (regional): European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE).

(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier applications:

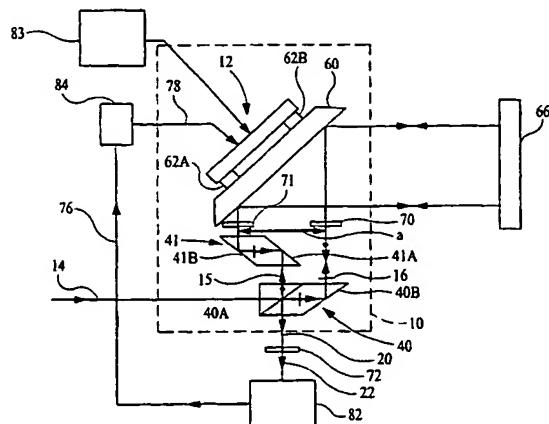
US 09/305,828 (CIP)  
Filed on 5 May 1999 (05.05.1999)  
US 09/384,851 (CIP)  
Filed on 27 August 1999 (27.08.1999)

Published:

— without international search report and to be republished upon receipt of that report

[Continued on next page]

(54) Title: INTERFEROMETRY SYSTEM HAVING A DYNAMIC BEAM-STEERING ASSEMBLY FOR MEASURING ANGLE AND DISTANCE



RECEIVED  
JUN -7 2002  
TECHNOLOGY CENTER 2800

**WO 00/66969 A2**

(57) Abstract: The invention features an interferometry system that measures changes in the angular orientation of a measurement object and that also includes at least one dynamic beam-steering assembly. The dynamic beam-steering assembly redirects one or more beams within the interferometry system in response to a change in the angular orientation of the measurement object. In many embodiments, the presence of the dynamic beam-steering assembly permits the interferometry system to measure the angular orientation of the measurement object using only a single measurement beam to contact the measurement object. Furthermore, in many embodiments, a control signal derived from the measurement beam contacting the measurement object causes the beam-steering assembly to redirect a measurement beam to contact the measurement object at normal incidence. When at such normal incidence, the interferometry system can calculate the angular orientation of the measurement object based on one or more interferometric signals derived from the measurement beam or based on the orientation of the beam-steering assembly itself.



(48) Date of publication of this corrected version:

18 April 2002

*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

(15) Information about Correction:

see PCT Gazette No. 16/2002 of 18 April 2002, Section II